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THE
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Poetry.

THE OLD PRINTER.

I see him at his case,
Whith his anxious, cheerless face
Worn and brown:
And the types, unceasing click,
As they drop within his stick.
Seems of life's old clock the tick,
Running down.

Years, years away have flown,
And the printer long I've known,
Boy and man;
Time was when step elate
Distinguished his gait,
And his form was tall and straight,
We now scan.

You could see him every day,
As he passed along the way
To his toil:
He labored might and main,
A living scant to gain,
And some interest small attain
In the soil.

And hope was high at first,
And the golden chest be nursed,
Till he found
That hope was but a glare
In a cold and frosty air,
And the promise, pictured fair,
Barren ground.

He ne'er was reckon'd bad,
But I've seen him smile right glad
At "leaded" woes,
While a corresponding frown
Would spread his features round
Where virtue's praise did sound,
If twere "close."

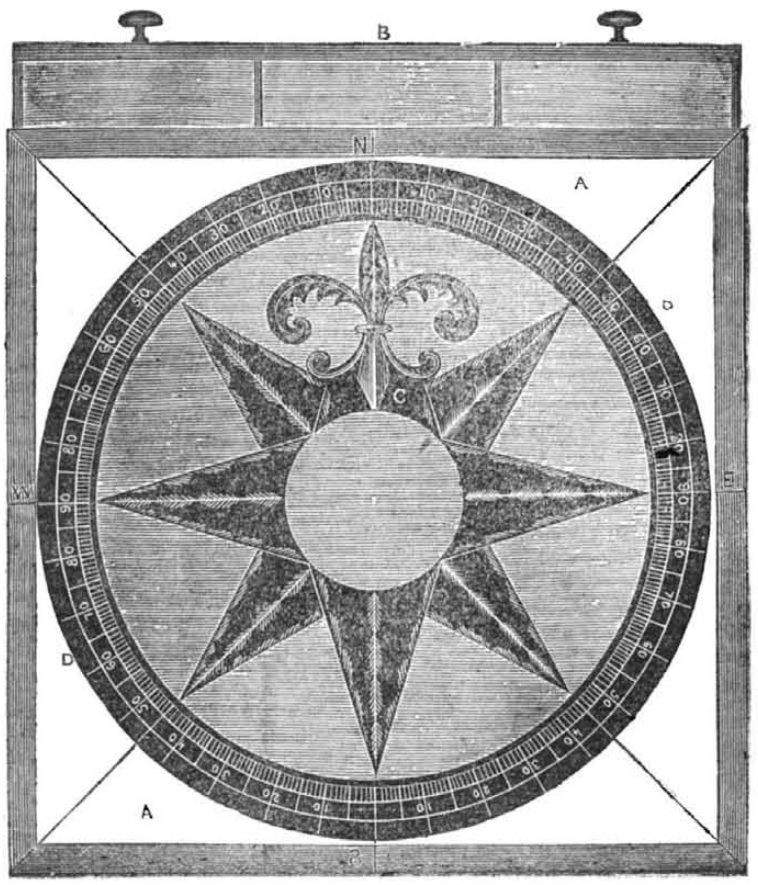
Long years he's labored on,
The morning hues are gone
From his sky;
For others are his hours,
For others are his powers,
And his days like passing showers,
Flitting by.

You can see him, night by night,
By the lamp's dull, dreary light,
Standing there,
With cobweb curtains spread
In festoons o'er his head,
That sooty showers shed
In his hair.

Advice to Wives.

Love is fickle, sages say
Beauty cannot hold him;
Love will steal himself away,
Maidens if you scold him.
Love!—he will not live with strife,
Even turn from beauty,
If the lady plagues his life
With her houshold duty.
You can have him in your power,
Ladies, if you try it;
Use him as you won him first,
Love—he can't deny it,
Do not fret, and scold, and pout,
Aggravating trouble;
Beauty kicking up a rout,
Makes misfortune double.

COATE'S PROTRACTING TABLE.



This is a Protracting Table, invented by Mr. M. Coate, of Coffeeville, Ala. It is composed of a square frame and central wheel C, attached to a neat table A, on which is received the circular scale D. The table is simply a writing table A, for convenience and and made square. Take any centre within the square, cut out a circle of the diameter required, and get a rim or circle D, of brass, and fasten it by screws to the table to be smooth with its surface. Attached to the table must be a frame or bed for the wheel C to revolve on its pivot, so as to move freely. B, are drawers to hold paper, mathematical instruments, &c. The apparatus is thus very simple and can be applied to any table, and easily removed from place to place. It is for laying out plats of ground and for maping, and is useful for surveyors and civil engineers. A parallel rule is used to work it backwards and forwards, and then by placing the square to the right all the E and W lines can be drawn. Parallel lines can be drawn very fast in this way, and every degree the wheel is turned varies from the parallels accordingly. The wheel C, operates on its pivot in the inside of the circle. The paper to draught on is placed upon the wheel which is made of wood, by draughtsman's buttons, and the surface of the wheel may have a printed piece of drawing paper as exhibited here, pasted on its surface to preserve the points the drawing instruments. The outer lines of the circle may be numbered with all the degrees from 0 to 360.

The following is the plan of Mr. Coate to make calculations in Trigonometry by the Protracting Table. "I want to know the height of an object on the opposite side of a river. First, I find the base of the object to be on a level with the place whereon I stand, I can neither recede nor turn to right or left. The object on the opposite shore is a tower and the base of a window I find to be six feet from the ground. I from this elevation take the angle of depression, which is 6°. I then take the altitude (height) which is 35°. To know the width of the river and the height of the tower on the table, I turn the wheel 6° (first having drawn lines E. and W., N. and S.) On the East and West line I set off 6 feet East, and from that point draw a line toward the South line and where it is crossed it will be the width of the river. I then turn the wheel back N. and S. and turn it 35° the other way, and where the lines cross (when drawn as before stated) it will be the height of the tower. The square must be moved to the point where the angle is taken from, then with the dividers take the distance on the same scale with which the six feet is set off, and I have both the height and distance. This calculation I can make in five seconds, and the whole rule of Trigonometry can be worked through in less than one day."

For colleges and schools this would be a valuable and beautiful instrument, and Mr. Coate is ready to negotiate with any individual on the subject. By addressing him, post paid, further information relative to the matter will be promptly obtained.

Crows---Mode of Catching.

Nine hundred crow scalps were sent to the Levy Court of Queen Ann's county, Md., on Tuesday last, by a gentleman from Dent Island. The bounty of six cents each amounted to upwards of fifty dollars. The sharp farmers of Kent Island manage to catch crows in the following way. They first obtain a live crow and pin him down on his back to the ground. His cries attract other crows to the spot when he seizes them with his bill and claws and they are then taken and killed The Centreville Times gives this on the authority of one of the Kent Islanders.

The citizens of Pittsburg have held a meeting to oppose the erection of the great bridge at Wheeling, Va., as being an obstruction to the navigation of the Ohio.

A Mr. Bushman has been astonishing the Londoners by the exhibition of his skill with the sword, and performing with ease the feat of Saladin with a silk handkerchief, as described by Sir Walter Scott.

RAILROAD NEWS.

The Panama Railroad.

The route for this road has been surveyed and a capital stock of one million, it has been reported, is subscribed. This is said to be sufficient to put a railroad in operation from Panama, on the Pacific, to the navigable waters of the river Chagres which flows into the Atlantic, to establish a steam communication from ocean to ocean, through in twelve hours, which is the limit required by the terms of the grant from the Granadian government.—Such a road can be made in about a year, more or less, after which the investment will at once become productive. The remainder of the railroad, from where it crosses the Chagres river, to Mansanilla Bay, (a branch of Navy Bay,) can be made at any time within six years, according to the convenience or interests of the Company.

In a year or two at farthest, the chief communication between the Atlantic and Pacific, for passengers and valuable freight, will be by way of the Panama Railroad. Already a line of British steamers run regularly between Panama and the South American coast, as far down as Valparaiso, touching at various points, and a line of American Steamers between Panama and the coast of North America, as far up as San Francisco. And this is but the beginning of what will be hereafter.

A fact of much importance in reference to this Railroad enterprise, and to steam navigation in the Pacific, is the discovery of Bituminous Coal on the Isthmus. It is of very fair quality, and is represented by engineers to be all that could be desired for driving steam engines. The mine is described to be inexhaustable. It is situated in the province of Veraguas, where the company has a right to select a portion of its lands.

Indiana Railroads.

A company has been organized to build a railroad from Lawrenceburgh to Decatur county, there branching—one branch running north to Rushville, and the other west, crossing the Madison and Indianapolis railroad at Edinburgh, through Morgantown, Martinsville and Spencer, through the rich bottoms of Flatrock, Diftwood, and White river, and the coal and iron beds, to the Wabash at Terre Haute. The counties through which this road will pass are among the most populous and productive in the state, and the direction of the road is such as to carry the trade to Cincinnati. Louisville is proposing, with Madison, a great attempt to secure the prize, by an improvement in her own direction; but as yet nothing tangible has resulted.—Meanwhile, the opposition route has upwards of $280,000 of its stock taken, and $70,000 have been subscribed to another company, which must, when the work reaches a certain point, be merged into this. On the 17th of August next, 20 miles will be put under contract, and by next fall 20 more—making 40 in all.

The Mexican Railroad.

We are authorized and requested, to state, says the Washington Intelligencer, that the time fixed upon by the Government of Mexico for receiving proposals for the construction of the railroad between Vera Cruz and Mexico, will be four months, commencing from the 14th day of last month, (June.)

A Villainous Act.

A man by the name of Brady placed some iron "*chairs*" upon the Worcester Railroad, (Mass.,) on the 4th inst. and came very near throwing a train with 300 passengers in it off the track. The fellow has been taken up for the act and confessed his participation in it. Hanging is too good for him.

Madame Catalini, the once famous singer, died of cholera on the 12th of last month.

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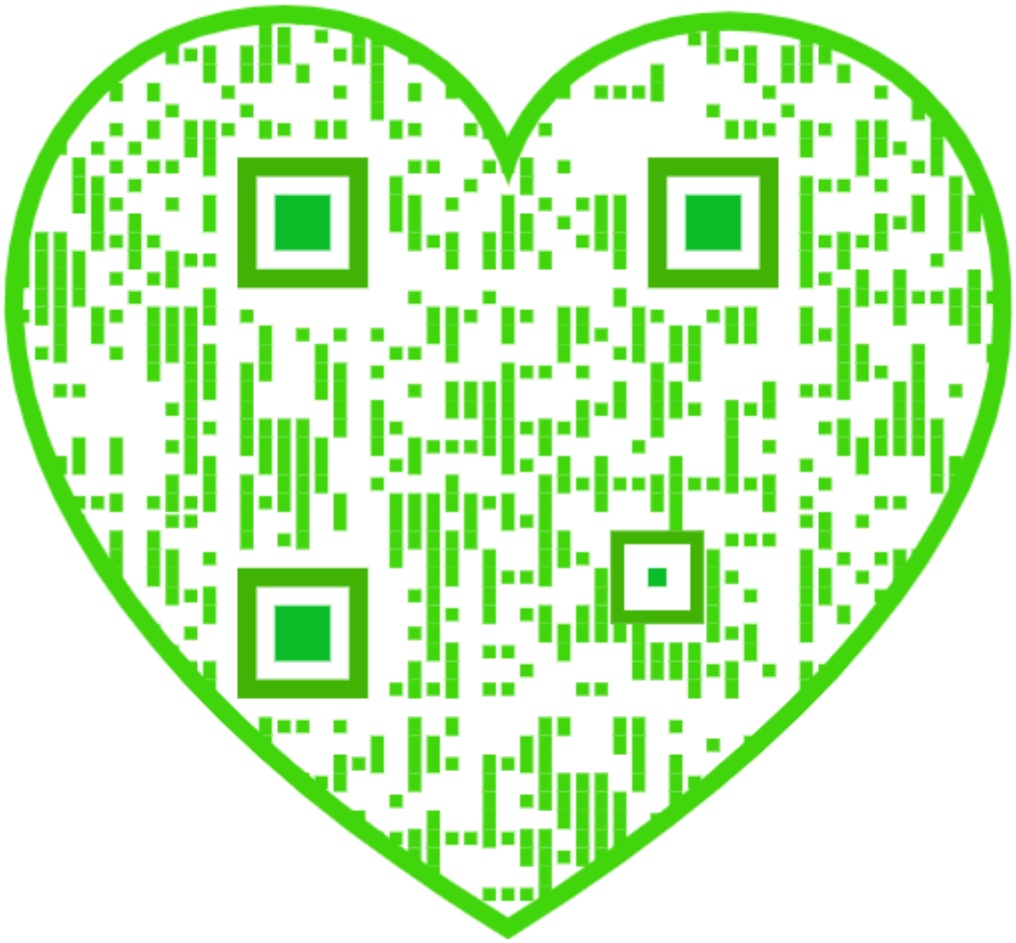

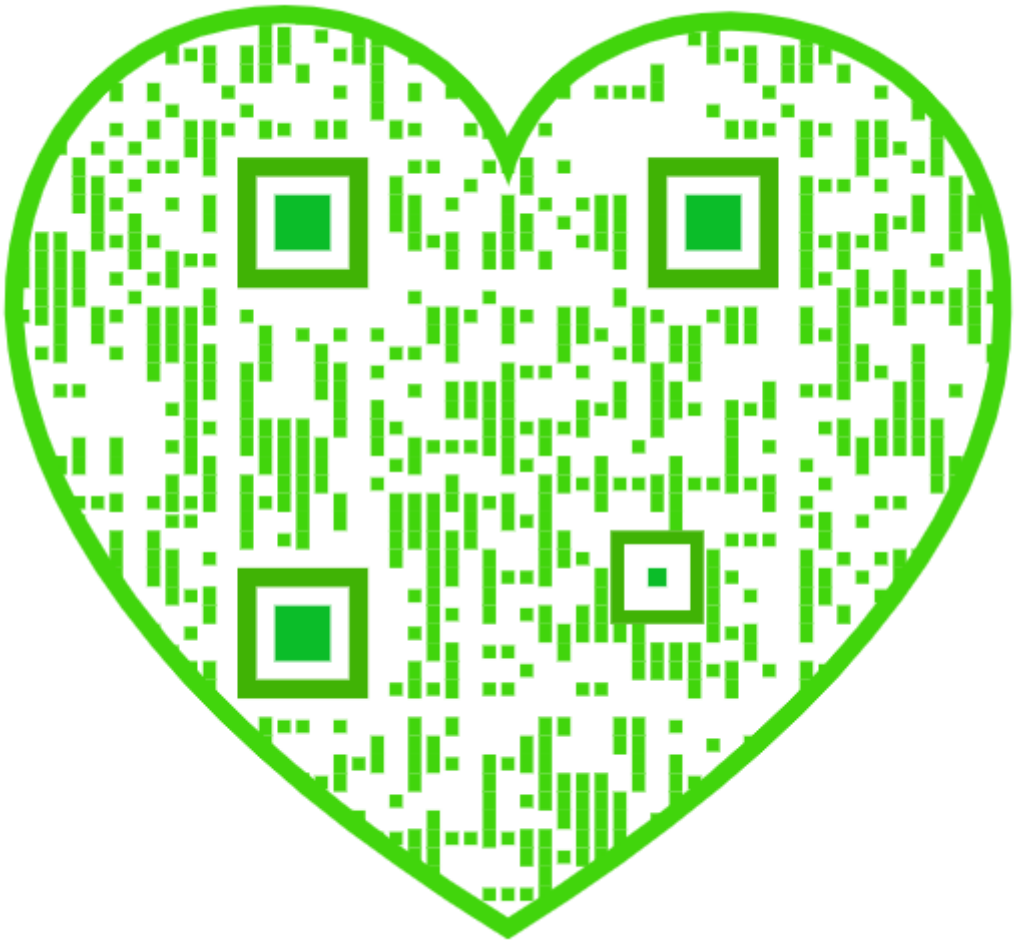

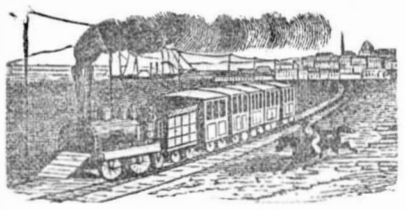

Cholera.

Wednesday,	July	4—	84	new cases, 27	deaths.
Thursday,	"	5—	64	" 26	"
Friday,	"	6—	71	" 28	"
Saturday,	"	7—	67	" 22	"
Sunday,	"	8—	43	" 27	"
Monday,	"	9—	120	" 46	"
Tuesday,	"	10—	111	" 44	"

Electricity and Cholera.

Dr. Andrand, of Paris, has communicated a paper to the Academy of Sciences, upon the connection between cholera and electricity.—According to his experiments, which extended over a period of three months, he found great difficulty in the months of April and May when the moisture of the atmosphere was variable, to procure sparks from the electric machine. Clear and fine weather in June when he anticipated an increase of electricity "only gave more and more feeble indications of it," and at length the machine remained entirely silent. This new decrease of the electric fluid coincided perfectly with the violence of the cholera. On the 8th, the electricity returned, a thunder shower followed, and by the 9th the atmosphere returned to its proper condition, and the cholera decreased. The rationale of the matter is set forth by Dr. A. as follows:

"Nature has infused into the atmosphere a mass of electricity, contributing to the service and support of life. If, by any cause, this mass of electricity is diminished, and sometimes decreased even to exhaustion, what follows? Every one suffers; those who carry within a sufficient supply of electricity, withstand it; those who can live only by borrowing electricity from the common mass, perish with the exhaustion of that mass. This is a clear and perfectly rational explanation, not only of the cholera, but, perhaps of all other epidemics that at intervals afflict humanity. If the great fact in question were recognized and admitted as a principle, I think it would be easy for medical science, professing, as it does, countless sway in producing and restraining electricity, to prepare for a successful resistance, upon its reappearance, of a plague, which I regard at present as, at least, arrested in its course, if it has not wholly vanished."

[This is a nipper to the ozone theory.

A National Fast.

President Taylor has issued a proclamation recommending that the first Friday in August be set apart as a day of fasting, humiliation, and prayer, that the "Ruler of Nations" may avert the ravages of the scourge now threatening to sweep over our country.

Cotton in Iron Hoops.

Dr. D. O. Williams writes to the Vicksburg Sentinel a letter in favor of iron hoops for cotton bales. He says "cotton put up with iron hoops will not burn up in several days, nor will it sink if thrown into the river. The writer never insures his iron hooped cotton against river or fire and there is a saving of fifty cents per bale on account of compressing." The Dr. is a practical man and we have no doubt that the experiment would be worth trying. Hoop iron may now be brought in the Liverpool market at two cents per lb. and the duty will not amount to more than three mills per lb. Rope sells at Louisville for eight to nine cents per lb.

The Grass Tree which grows in India, from which the fibre is obtained for manufacturing grass cloth, it is thought would flourish equally well in the middle States of this country.—One of our missionaries to China, Rev. Mr. MacGowan, writes that he has drawn up for the Agricultural Society of India an account of the article, which may be useful to those who may feel disposed to attempt its introduction into the United States. The report will probably appear in the transactions of that Society for 1848—'49.

A New Old Invention.

A new application of the principle of steam has been made in Paris, which is explained as follows:—Water boils and gives off steam at 100 degrees (French scale) Heat the boiler to 800 degrees, and the same quantity of water will give off steam with an expansive power perhaps fifty times as great. The heat should be always kept just below that at which the water takes the spherical state and gives off no steam at all. A French mechanic has made a small boiler, which, under the great heat above mentioned, runs a powerful machinery. The boiler and engine occupy about one twentieth part of the space occupied by a common boiler of the same power.—*Ex.*

[We wonder if ever that "French mechanic" saw a locomotive boiler, or ever read a treatise on steam, or ever heard tell of that other French invention which come out last year, of a total revolution being caused in engine propulsion, by keeping the water in the steam boiler always in the spherical state.—Some strange things take place once in a while, but it is the first time that we were informed that there was anything new in the increase of the expansibility of steam by an increase of heat. The common power of steam depends upon the amount of pressure on the valve. High pressure steam is just low pressure steam forced into a smaller space.—The quantity of heat in a given weight of steam, is always the same. There can be no doubt but the "French mechanic" mentioned above will produce what is called surcharged steam—steam to which an additional quantity of heat has been imparted, but this is not the kind commonly used, and woe be to that boiler that uses it. Corrosion and destruction will soon be its fate.

Another Great Discovery—Sensitive Glass.

We had occasion some time since to say something about the Druids and their worship The gentleman who is getting up and arranging the mysteries and ceremonies for the Drudical exhibition, is well known to us as a practical chemist, but as he does not wish to appear before the public until the proper time we withhold his name, but take liberty of speaking of the wonderful process of science.

The person alluded to spent some weeks in Pittsburg in endeavoring to produce the magical glass of the Druids, but did not succeed. The experiments have been continued here, and the Druidish musical tones, from tubes of glass, are perfect and make sweet harmony. But the sensitive glass goblets are the most wonderful. It was a secret of the Arch-Druid to make his glass sensitive to poison, and tradition says that his food and beverages were submitted to a test in those goblets, and if they contained poison the glass would break. One of these glasses was shown us yesterday, in which water was forced, and it remained as sound as any other tumbler, but on adding a little poison, the glass flew at once in several pieces. This is something more mysterious than has been exhibited yet, and we can say in all confidence that the exhibition will be one of remarkable scientific wonder.—Cincinnati Commercial.

[We have no doubt but when this takes place it will be a "remarkable scientific wonder." But where did the editor of the Commercial learn that the Druids used glass vessels. We have always had the ignorant historical belief, that their vessels were composed of horn, and shell. "Come to the feast of shells," says Ossian. The greatest scientific feat about the above glass, is its knowledge of poisons, for assuredly their natures are so different that they cannot act upon it alike.

Extraordinary Trial in India.

Consequent upon the conquest and annexation of the Punjaub, by the English, some of the high Sikh dignitaries have been brought to trial on a charge of murdering two British officers, Lieut. Anderson and Mr. Agnew, who it may be remembered, were put to death at the beginning of the outbreak. The trial was held before a military commission of four British and two native officers, and a colonel of the Sikh army. Evidence implicating the Dewan Moolraj himself, was elicited on the trial of a Sikh chief named Goojur Singh. It is intimated in some of the Indian papers that Moolraj stands in considerable danger of being hanged.

Rich Present.

The Roman Catholic clergy of the diocese of Boston have presented to their Bishop, the Rt. Rev. Dr. Fitzpatrick, a number of costly articles in token of their estimation of his services. The honor is the more striking and valuable, because he is one of the youngest of the Bishops in the United States. The Catholic Observer gives the following description of the gift:

The offering consists of a grand folio Pontifical, in four volumes, the largest and most complete to be had in Europe,—such as is used on the most solemn occasions in Rome—a Missal enchased in "Verveil," with various emblems in gold and silver, in the finest state and most elaborate style—a Bell,—the cruets and stand, all in silver and gold of truly admirable Parisian workmanship—a basin and ewer of solid silver, richly gilt, and of size and proportion that might deserve the name of magnificent, and a beautifully designed and perfectly finished Crosier of silver, richly gilt, (vermeil,) and inlaid with precious stones, all of them of great beauty, and several of them of value as gems.

Drought in the West Indies.

It said that the drought which has been experienced on the Island of St. Thomas this season, is, in point of duration, almost without a parallel. For the last five months, with the exception of a single shower lately, there had not been a particle of rain. The vegetation was all dried up, and the earth was covered with a coating of dust. A similar state of things had existed on many of the neighboring islands. In the island of Mayaguez, P. R., the crop will fall short fully one third of an average.

South American Cotton Factory.

At Lima in Peru there is a cotton factory.—The entire building and machinery were brought from the United States. The building is 200 feet long by 60 broad—employs 100 looms, 4,000 spindles and about 100 operatives.

The operatives are mostly Spanish girls from Lima, although a few are from the interior, and are of Indian extraction. The factory is owned by Dr. Casanava, a Spanish gentleman. Cotton cloth of a very good quality is manufactured. The girls all speak the Spanish language.

Barry's Tricopherous.

We take pleasure in once more recommending this article to our readers, feeling confident there is no preparation used for the hair that renders it so beautiful and keeps the head so clear from dandruff, as the wash prepared by Prof. Barry. Only 25 cents a bottle—office 173 Broadway.

Singular Phenomenon.

From the Baton Rouge Advocate, we learn that some thirty or forty square feet of ground on the premises of Mr. Bessy, of that place caught fire from spontaneous combustion. A bright flame discernable for several hundred yards, accompanied by a strong smell of brimstone, was emitted. Water thrown on it only increased its fury, and it was finally subdued by smothering it with ashes.

Singular Freak of Lightning.

The Bangor Courier says that during a thunder shower a few days since, the machine shop in Newport, in that county, where are manufactured cast iron Bench Vices—was struck by lightning near the centre of the building, and it then crinkled about among the ironworks in the shop melting out little bits of iron here and there, welding together bunches of sheet iron, and setting the shop on fire in a great number of places, at least fifty, and then disappearing without injuring any person or doing any very serious damage.

Singular Phenomena.

During the prevalence of the cholera at San Antonio, Texas, the river water there, celebrated for its purity, was unfit for use when kept a few hours. In less than half a day a vessel filled with water from the stream emitted an offensive smell, similar to bilge water.

Cholera in St. Louis.

The city of St. Louis, Mo. with a population of 65,000 had 700 deaths from cholera in one week. In nine weeks this would decimate the population.

Sir John Franklin.

The Montreal Herald says that tidings have been received from the Hudson Bay territory, with intelligence from Fort Simpson of the date of the 4th of October last. The writer of a letter from that post says, eighteen men of the expedition arrived there the day before from Fort Confidence. They went round from the mouth of the McKenzie to the Coppermine, but no vestige or word of Sir John Franklin, or any one else, except Esquimaux whom they saw in large numbers. A very large party of these daring rascals met the expedition at the mouth of the McKenzie, and as on a former occasion, wanted to make a prize of the boats and all that was in them.—But nothing serious happened. Sir John Richardson is to proceed to Canada as soon as the McKenzie breaks up.

A Painful Sight.

To see young men lounging about month after month, neither working nor desiring to work; while—perhaps—poor parents are toiling from morning till night, to support and save them from a disgrace which their own thoughtlessness and laziness is fast bringing upon them. But how many such sights are to be seen in every community? How many are found who have not that sense of shame, which is necessary to force them off the lounger's seat; but enough of that false pride which will not allow them to take hold of employment if it does not happen to be genteel and profitable! Alas! the fate of such is sealed they will go down to the grave unpitied, unmourned and soon to be forgotten by all.

Camelina Sativa.

Some of the Georgia planters, for want of sufficient encouragement in the cultivation of the cotton-plant, are beginning to give attention to the culture of Camelina Sativa, (or gold of pleasure,) an unctious seed resembling flax-seed, from which oil is expressed in the same manner as from flax-seed. The plant is a native of Siberia, but well adapted to our Southern climate. It is an annual growing from two and a half to three feet high and yields a large and certain crop. It is already in demand in this country.

Wear of the Niagara Falls.

The 710,000 tons of water which each minute pour over the precipice of Niagara are estimated to carry away a foot of the cliff every year. Taking this, and adopting the clear geologlcal proof that the fall once existed at Queen's-town, four miles, we must suppose a period of 20,000 years occupied in this recession of the cataract to its actual site; while in the delta of the Mississippi, nearly 14,000 square miles in extent, and estimates founded on its present rate of increase, and on calculation of the amount of earthy matter brought down the stream, has justified Mr. Lyell in alleging that 67,000 years must have elapsed since the formation of this deposit began.

The Moorish Sabbath.

The American Consul writing from Tangiers, in Morocco, observes:

"There are three Sabbaths in each week. The Moors, or Mohammedans, keep Friday, the Jews Saturday, and the Christians Sunday. But the Sundays of the Moors and Jews are mere feast days, given up to feasting and frolicking, and frequently to all manner of licentiousness; and yet so strict are the Jews in non-essentials—in mere forms and ceremonies—that they dare not touch a particle of fire on their Sabbath—not even a lighted candle—lest they should commit the unpardonable sin."

Inland Navigation.

A brig is about to be despatched from Chicago, (in the heart of the American continent,) direct for San Francisco. She is not going over the Rocky Mountains, but down the Lakes and the river St. Lawrence, and then around Cape Horn.

The Catholics in this ecclesiastical district are relieved from eating fish on Fridays until the 18th of August next. They may eat beef. This is owing to the cholera. In the East, salt codfish is allowed to be more safe than beef.

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Nature and Relations of Water.

BY PROF. DRAPER.

No living thing can exist, except it contains water as one of the leading constituents of the various parts of its system. To so great an extent does this go, that, in a thousand parts of human blood, nearly eight hundred are pure water. This distribution of organized beings all over the world is to a great extent, regulated by its abundance or scarcity. It seems as if the properties of this substance mark out the plan of animated nature. From man, at the head of all, to the meanest vegetable that can grow on a bare rock, through all the various orders and tribes, this ingredient is absolutely required. Insipid and inodorous in itself, it takes on the pecularities of all others bodies ; assumes with readiness the sweetness of sugar, and the acidity of vinegar. Distilled with flowers, or the aromatic parts of plants, it contracts from them their fragrance, and with equal facility becomes the vehicle of odors the most offensive to our sense.

We talk about the use of water and imagine that nature furnishes us a perenial supply, we constantly forget that in this world nothing is ever annihilated. The liquid that we drink to-day has been drunk a thousand times before : the clouds that obscure the sky have obscured it again and again.

What then becomes of the immense quantities of water, which, thus entering as a constituent of the bodies of animals, gives to their various parts that flexibility which enables them to execute movements, or combining with vegetable structure fits them for carrying on their vital processes ? After the course of a few years, all existing animals and vegetables entirely pass sway ; their solid constituents disintegrate and take on other conditions, and the waters, lost perhaps, for a time in the ground, at last escapes in the form of vapor into the air. In that great and invisible receptacle, all traces of its ancient relations disappear ; it mingles with other vapors that are raised from the sea by the sun. From the bodies of living animals and planets, immense quantities are hourly finding their way into the reservoir.

From the forests and meadows, and wherever vegetables are found, water is continually evaporating, and that to an extent far surpassing what we might at first be led to suppose. In a single day, a sun-flower of moderate size, throws from its leaves and other parts nearly 20 ounces weight.

In the republic of the universe there is a stern equality, the breath of the rich intermingles with the breath of the beggar.

A man of average size requires a half ton of water a year ; when he has reached the meridian of life, he has consumed nearly three hundred times his own weight of this liquid.

These statements might lead many to doubt whether the existing order of nature, as dependant on the waters of the sea, could for any length of time supply such a great consumption.

The human family consists probably of a thousand millions of individuals ; it would be a very moderate estimate to suppose, that the various animals, great and small, taken together, consume five times as much water as we do, and the vegetable world two hundred times as much as all the animal races. Under such an immense drain it becomes a curious question what provision nature has made to meet the demand, and how long the waters of the sea, supposing none returned to them, could furnish a sure supply ?

The question involves the stability of existence of animated nature, and the world of organization ; and no man, save one whose mind is thoroughly imbued with an appreciation of the resources upon which the acts of the Creator are founded, would, I am sure, justly guess at the result. There exists in the sea, a supply which would meet this enormous demand for more than a quarter of a million of years.

Worcester Railroad.

The number of persons carried over the Worcester Railroad, a greater or less distance on the 4th inst., is estimated at about 9000, and the receipts were probably $3,500. This was doing a good business.

The Specific Gravity of Liquids.

As distilled water is always of the same weight at any given temperature, it is taken as the standard of comparison in comparing the weight of one body with another, except in comparing the weights of the gases when atmospheric air is taken as the standard. As it is sometimes of consequence to be able to ascertain the relative weight of a substance, and the methods of accomplishing this may be of service, first premising that it is usual to take the specific gravity at 60° Fah., to which temperature both the distilled water and the substance to be weighed must be reduced, in order to prevent a troublesome calculation. The substance to be weighed, if heavier than water is to be attached to one scale of a good balance by a piece of horse-hair or fine wire, so as to hang beneath the pan or scale; the absolute weight of the substance is then ascertained very accurately ; it is next immersed in distilled water at 60° and the beam being again brought into equilibrium the weight lost by the immersion is ascertained. The absolute weight is then to be divided by the weight lost in the water, and the result gives the specific gravity.

Suppose a substance weighing 360 grs. to lose 60 grains by immersion in water, the specific gravity of such substance will be=6 for 360—60=6.

When the substance whose specific gravity is required, is lighter than water, it may be suspended with some heavier body, and having determined the weight of the former in air, and of the latter in water, the two should be fastened together with fine thread, (not so closely as to exclude the water from between them) and weighed together in water, when it will be found that their aggregate weight will fall far short of that of the heavier body. If now the weight of the lighter body be subtracted from that of the heavier body, and the remainder be added to the weight of the former, in air, the weight of a quantity of water equal in bulk with the lighter, will be obtained ; if the weight of the lighter body in air be divided by the last mentioned sum, the specific gravity of the lighter body will be obtained.

Dr. Paris gives the following example : " A piece of elm wood, having been varnished over to prevent its absorbing water, was found to weigh 920 grains in *air* ; a piece of lead taken as ballast, was ascertained to weigh 911-7 grains in *water* ; the elm and lead were then tied together, and were found to weigh in water only 331-7 grains, being 580 grains less than the weight of the lead alone; therefore 580 were added to 920, that is to the weight of the elm in air, which made up the sum of 1500 ; lastly, 920 were divided decimally by 1500, and the quotient 6133 gave the specific gravity required.

When the substance whose specific gravity is required, is *soluble* in water, some other fluid of known specific gravity must be used, which does not act upon it; alcohol, oil of turpentine, or olive oil, may in most instances be used, or in some cases the substance may be coated with varnish. When the substance is in powder, it may be weighed in the specific gravity bottle.

For ascertaining the specific gravity of liquids, a thin bottle holding 1000 grains of distilled water at the temperature of 60° is generally employed. If filled with any other liquid, the specific gravity is immediately ascertained ; thus it would be found that the above bottle filled with mercury at 60° would be 13-500, which therefore is the specific gravity of mercury; the same bottle would hold 1845 grains of sulphuric acid, 1420 of nitric acid, &c., which numbers of course represent the specific gravity of these liquids.

Sometimes, in ascertaining the specific gravity of liquids a *hydrometer* is employed, but it cannot be used where great exactness is required. Where, however, a number of specific gravities are to be quickly determined, as in taking the specific gravities of spirituous liquors for the purpose of levying duties, or in certain processes of the arts, these instruments from the facility of their application become indispensable.

When Louis Phillipe read Louis Napoleon's message he exclaimed, " I am avenged."

To Manufacture Attar or Essential Oil of Roses.

This celebrated essence is obtained from roses by a simple distillation, conducted in the following mode: A quantity of fresh roses, (forty pounds for instance,) with their calyxes, but with their stems cut short, are put into a still with sixty pounds of water. The mass is well mixed with the hands, and a gentle fire is made under the still. When fumes begins to rise, the cap is put on, and the pipe fixed ; the chinks are luted ; cold water is put into the refrigeratory, and the receiver adapted. A moderate fire is continued ; but when it begins to come over, is gradually lessened. The distillation is carried on till thirty pounds of water are drawn off, which generally happens in about four or five hours. This rose water is poured upon forty pounds more of roses, and from fifteen to twenty pounds are drawn off by the same process as before. This cohobated rose water is poured into pans of earthen ware, or tinned metal, and left exposed for a night ; when the *attar*, or essence, will be found in the morning congealed and swimming on the surface of the water ; it is to be carefully skimmed off, and poured into a vial. When a certain quantity has been thus obtained, the water and fecula are to be seperated from the clear essence. The first is easily done, as the essence congeals with a slight cold, when the water may be poured from it. The fecula may then be made to subside, by keeping the essence fluid by heat. They are as highly perfumed as the essence. The rose water, after all the essence has been skimmed from it, is to be employed in future operations, instead of common water.

The very small quantity of essence obtainable from the roses in India, has caused various additions to be made in the distillation, particularly sandal wood ; but this adulteration is discoverable by the flavour of the sandal, and the fluidity of the oil in common cold. In Cashemire a sweet-scented grass is used as an addition, which does not injure the perfume, but impedes its congelation. The proportion of pure essence yielded by the roses is very variable, from differences in the seasons, and in the manner of conducting the process. In India, three drachms from one hundred pounds of leaves is a large proportion. From a large field there was procured only at the rate of two drachms to the hundred pounds. The color of the *attar* is no criterion of its quality. It was obtained green, yellow, and reddish, from roses of the same ground, but collected on different days. The calyxes do not impair the quality of the *attar*, nor give it a green color.

The Use of Camels.

It is a fact well known to Eastern travellers and especially to those who have visited the mountainous regions of Syria, Palestine, and the Peninsula of Sinai, that the camel is as serviceable on rough mountain paths as in the moving sand of the desert. On this account the modern Arab never troubles himself with road-making. He will not even remove a stone from the middle of his path which leads to his watering-place. The dry bed of a torrent is his high road cross the mountains, and foot prints are his guides through the plains. The tough soles of the camel's feet are affected neither by the burning sand nor by the loose sharp-edged stones strewed over that volcanic mountain range which extends from the Taurus to the Indian Ocean.

Any young camel may be trained for racing and for war, although the mountain breeds are best adapted for these purposes. The camel drinks only every second day ; but it may be deprived of water for three days together, without any effect upon its health and vigor. It will perform an eight day's journey with no other food that three pounds of oil-cake and a few handfuls of grain. The dromedary carries sixty pounds' weight, in addition to its rider ; and it will outstrip the fleetest horse in a day's march. The " cavass" of the Egyptian Government travel on dromedaries from Cairo to Suez. a distance of ninety-three miles, in eight hours.

The common day's journey of caravans in Syria and Arabia is from 25 to 27 English miles, and the load of each camel is between four and five hundred weight. The Indian mail is conveyed from Suez to Cairo on camels in 18 hours. An Egyptian camel, amongst the tallest and strongest breeds, will carry, for a short distance—six hundred to one thousand yards—from 10 to 20 cwts.

There is no reason why the camel should not be as serviceable to man on the Prairies of Texas and the mountain region of Mexico, New Mexico, and California, as in the corresponding tracts of the Old World.

A writer in the National Intelligencer recommends a shipment of Camels from Morocco where good ones can be bought for about $30, in order to test their qualities in the new world. We think that the idea is a good one and we would like to see a trial made, at any rate.

Lawyers' Mistakes.

The following article from Warren's Book of Lawyers, will give our readers some idea of the critical correctness which is required of lawyers in the drawing up of their papers.

I myself recollect a case in which an attorney's clerk had omitted one single letter, in making the copy of a writ of capias ; to be served upon a defendant, who was clandestinely going to India, owing a widow a large some of money, which she had lent him. She accidentally, however, discovered what he was about, and instantly communicated with her attorney, in such a state of alarm as may easily be conceived, He was an able and energetic practioner ; and within a few hours' time, had got a capias against the di-honorable fugitive, and accompanied by an officer, succeeded in arresting the prisoner just as he was stepping into a steamboat to go to a ship, which was expected to sail from Gravesend on that day or the ensuing one. You may guess the consternation with which he found himself thus overtaken ; but it scarcely equalled that with which the attorney received, early the next day, a rule to show cause why the defendant should not be discharged out of custody, on entering a common appearance, on the ground of a variance between the writ and the copy served ; the discrepancy being between " Sheriffs of London" in the one, and " Sheriff of London" in the other. Eminent counsel were instantly instructed to show cause, and struggled desperately to discharge the rule ; but in vain. " It is better," said the tranquil Chief Justice Tindal, "to adhere to a general rule, capable of application to all cases, than to raise an argument on every imperfection in a copy, as to the materiality or immateriality of the error, and thereby offer a premium on carelessness."

So the rule was made absolute—the defendant discharged—he went to India. I sadly fear that he has never made his appearance here again, and that the widow lost all that he owed her, and which but for the wretched mistake, she would in all human probability, have recovered. This happened nearly sixteen years ago, and coming under my personal notice, made a deep impression on my mind. I have a vivid recollection of the vexation and distress which it occasioned to the parties both lay and professional.

Only a year or two ago, a precisely similar decision was reluctantly pronounced in the Court of Exchequer, in respect to a similar blunder, the very same word ! (See Moore v. Magan, 16 M. and W. 95.) Now, can anything be imagined more serious to the client and mortifying and injurious to the practioneer, than such miscarriages ? Counsel, also alas, can make desperate slips of this sort.—That eminent conveyancer, the late Mr. Butler, accidently omitted a single word, " Gloucester," on drawing the will of Lord Newburgh, which deprived a lady, the intended devisee, of estates worth £14,000 ($67,900) a year.

To Cook Green Peas.

Place in the bottom of your sauce-pan or boiler, several of the outside leaves of head salad ; put your peas in a dish with two ounces of butter in proportion to half a peck of peas—cover the pan or boiler closely and place it over the fire—in thirty minutes they will be ready for the table. They can either be seasoned in the pan, or after taken out.—Water extracts nearly all the delicious flavor of the green pea.

The amount of California gold received at the Mint, Philadelphia, is about $2,000,000.

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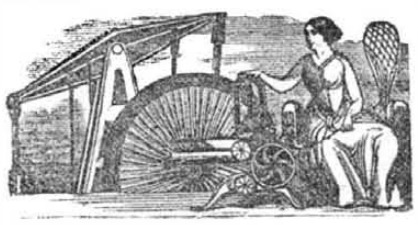


New Inventions.

Apparatus to Prevent Conductors on Railroad Cars being struck down by Bridges.

Mr. J. Milton Benham, of Wilmot, Racine Co., Wisconsin, has invented an apparatus to be attached to the front of Railroad bridges for the purpose of preventing careless conductors from losing their lives, as has sometimes happened, when standing or walking on the car, forgetful of the bridge. The apparatus consists of graduated springs projecting like arms on bars from the bridge, which if a person be standing on the car will grasp him in a moment and lay him flat upon the car to pass under the bridge. The invention is a humane one, and is worthy of a patent, to secure which the inventor has taken the usual measures.

Improvements in Ship Apparatus.

Mr. E. C. P. Andrews of East Boston, Mass., an old inventor, has lately made a splendid improvement in the construction of windlasses, and another on his improved steering apparatus. His late steering apparatus so well and favorably known, will at once be superseded by his improved one. The improvement consists in having a worm screw on the wheel shaft meshing into a cog wheel fixed upon a shaft at right angles to the wheel shaft, and to the extremities of which are attached universal joints, connected to cranks and shaklebars (one on each side,) extending to and secured to universal joints on, and near to the tiller head. The wheel therefore, the screw, wheel and the side levers exert a tremendous power in a compact space, to operate the tiller. It is an arrangement of parts, which by putting the helm *hard down*, it does not require at any time to be lashed, and on vessels, when short of hands, the helmsman can in an exigency, thus leave the wheel to give a strong pull, without any fear or trouble from the helm.

The other ship apparatus, is a compound windlass and horizontal capstan, and a new way of operating the windlass by a capstan placed on the deck above it. The windlass is divided into sections, one part can be coupled or uncoupled with the other at pleasure, and the horizontal capstans can be used in connection with, or without the windlass, just by coupling them together. The windlass (or it may be called two, for they are in sections and can be operated by the capstan above, singly or together) is worked by reciprocating rods and palls, which are moved up and down by inclined planes fixed around on the base of the capstan. Some of our best Sea Captains have expressed themselves highly pleased with these inventions, and they are about to be introduced into some of the newest and finest vessels in Boston and this City. Measures have been taken to secure a patent.

New Engine Governor.

Mr. James W. Chapman, an old inventor in Washington, Davis County, Ia. has made a new improvement in the Governor for engines, which may be denominated the "pendulum governor" and which has been highly recommended as a valuable invention. Its construction is very novel and it is represented to operate very beautiful and it is well worthy of attention. See advertisement in our advertising page.

New Cotton Press.

The Alabama Planter says that Mr. D. Mc Comb is the inventor of a Cotton Press which requires less than a horse power to reduce five hundred pounds of cotton to shipping size, and less than one hour's work of the horse in making fifty bales, or less than one minute to the bale.

[It is not in our power to explain the principle of this press or we would.

Machine for Letter Envelopes.

A patented machine has been put in operation in Birmingham, England, for the manufacture of Envelopes, the number produced by which, in complete form, is said to be astonishing. Supposing it to be turned by manual labor, one man, with the aid of three or four young girls or boys to gather the envelopes, would, it is calculated, by its means, be able to manufacture 30,000 to 35,000 in an ordinary working day, the paper being cut beforehand; while an expert hand, in the ordinary way, exclusive of the cutting, cannot upon the average, make more than 2000 in the same manner as those in question, which have a device stamped upon them at the point where the seal is usually placed.

Artificial Leech.

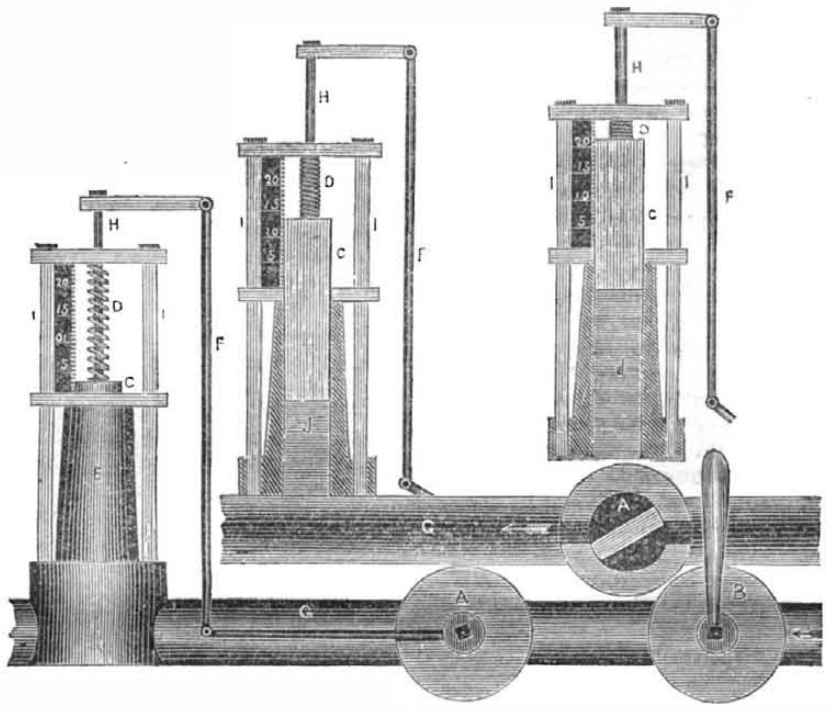
The Courier des Etats Unis, quoting from the Journal des Debats of Paris, describes an important discovery, which it says "is likely to be of the greatest service to humanity, and occupies at this moment the attention of the French scientific world. It is a mechanical leech (*sangsue mechanique*) which M. Alexander, civil engineer, already celebrated for his useful discoveries, has submitted to all the scientific bodies, which, after satisfactory trials, have caused this *sangsue* to be adopted in all the hospitals, after having proved not only the immense economy of its use, but, what is better, the decided advantage which it has over the natural leech, always repugnant to the patient, and sometimes dangerous.

The President of the French Republic has given orders for the supply of the apparatus in every community where it may be found serviceable by indigent patients."

[This artificial leech is described and illustrated in No. 41 this vol. Scientific American, and we must say that we think the scientific bodies of Paris are sometimes behind the lighthouse; in this case they certainly are.

BAKER'S STEAM GOVERNOR.

Fig. 1. Fig. 2. Fig. 3.



This is a new Steam Governor, invented by T. Baker. Esq. of Stillwater, N. Y., who has taken measures to secure a patent for the same. The main feature of the improvement is its perfect controlling power, and being much cheaper than any other kind now in use. It is very simple in construction, and not likely to get out of repair. It is attached to the steam pipe leading from the shut off valve to the engine, being a small piston balanced by a spring, which rises and falls by the pressure of steam on the engine, opening and closing a valve, which regulates the quantity of steam, and therefore the velocity of the engine. The less power required the less steam given; the more power, the more steam will be given, regulating the velocity to perfection.

Description.—Figures 1, 2 and 3 are sectional views, showing the operation of the Governor by the pressure of steam required to act upon the piston of the engine. A, Governor valve. B, shut off valve. C, small piston by which the steam operates the Governor valve, through the piston rod H, and connecting rod F. D, is a spiral spring to balance the pressure of the steam. E, is the cylinder. G, the steam pipe; and the graduated scale shows the pressure of steam on the piston. I, are rods to hold the parts together. J, density of steam in the cylinder of the Governor, being the same as that acting upon the piston ot the engine.

Operation.—Suppose the piston of the Governor to be one inch, and the safety valve be placed at 25 pounds to the inch, (or whatever is the pressure graduated on the Governor,) the valve B, being open, and the piston of the Governor being at its greatest height, opening the Governor valve entirely, all the steam is then acting upon the engine, driving whatever machinery it is intended, at a certain velocity, fig. 2. Then if some of the machinery is detached, it is evident that the tendency of the engine is to run faster, the aperture being the same will lessen the pressure or density of the steam, by which the Governor will fall to the pressure required, as at fig. 3, closing the valve to suit the velocity. On attaching the machinery again the density will be increased, opening the valve accordingly.

New Rice Pounding Machine.

The Camden, S. C. Journal says that Colonel Bossard has made valuable improvements in machinery for pounding rice, which it describes as follows:—"This machine operates with a shaft of eight squares which is eighteen inches in diameter, in every alternate square there are fixed two lifters parallel to each other, placed far enough apart to pass up the interior sides of the pestle. The lifters are just thirteen inches long, when measured from the surface of the shaft outward, and in each of the other squares of the shaft, there is a single lifter of equal dimensions, placed in a central position to the former ones. Pinions are placed on the outer sides of the pestle, in horizontal position to the centre of the shaft, at which point the parallel lifters are in the revolving of the shaft to receive the pestle and bear it up while the single lifter entering a mortice in the centre of the pestle while ascending, receives its weight at the instant the parallel lifters are at the elevation required.

The instant the pestle falls into the mortar, say in a second of time, the pinions are again taken by a parallel lifter, and thus the process is continued producing four blows of the pestle to each entire revolution of the shaft.

Three lifters are therefore employed to each entire lift of the pestle; producing in all, twelve lifters in the whole circumference of the shaft to each pestle."

[We do not know but this machine differs from all others, in all likelihood it does, or it would not be described as a new improvement, but the description given above conveys to our mind the exact idea of the old stamping mills.

Copper Type.

Foreign papers state that a Mr. Pettit, of Holborn, London, has discovered the power of making type, of infinite durability, from copper, at a less expense than that now produced from lead, and that a font of this type will last for years, and is far more beautiful than any in present use.

[The best types at present in use, are those which have a small amalgum of copper in them, and we believe that in the long run they will be found better than those of copper, just as it has been with the sheathing metal of ships—the pure copper does not answer so well as an alloy.

Preservation of Life from Wrecks.

Lieut. John Mc. Gowan has been appointed by the Secretary of the Treasury to superintend the establishment of the several stations on the sea coast between Little Egg Harbor and Cape May, authorized by the act of March 3d, 1849, for the prevention of wrecks, and for the saving of the crews and passengers of vessels when blown ashore. Six stations are to be established within the sixty miles alluded to, each of which is to be furnished with surf boats and life cars, and lines, rockets and carronades.

The method to be adopted (says the Philadelphia Ledger,) in saving lives from wrecks is similar to that which has been successfully used on the coast of England, viz:—To throw lines on board the wreck either by means of rockets or by attaching them to balls fired from carronades. When this is accomplished the persons in danger can be brought on shore by means of the life cars, which are furnished with rings so that they can be hauled along the line to and from the wreck. They are made sufficiently large to contain two or three persons, with openings in the decks for the purpose of ventilation. The surf boats and life boats are both to be constructed of galvanized iron, and will be furnished with floats of India rubber, so that they cannot be capsized, no matter how heavy the surf may be. The rockets used in this service have heretofore been imported from England, but Mr. Samuel Jackson, the pyrotechnist of Philadelphia is about to manufacture some for the purpose of experimenting, which, it is expected, will be better than the foreign article.—Lieut. Mc. Gowan is acting in this matter in connection with the Board of Underwriters of this city.

Assaying Metals.

The assaying is the most curious and scientific of all the business in the mint. The melters take the gold dust, melt it, and cast it into a bar, when it is weighed accurately, and a piece is cut off for the assayer. He takes it, melts it with twice its weight of silver, and several times its weight of lead. It is melted in small cups made of bone ashes which absorb all the lead; a large part of the silver is extracted by another process, and the sample is then rolled out to a thin shaving, coiled up, and put in a sort of glass vial called a matrass, with some nitric acid. The matrasses are put in a furnace, and the acid is boiled some time, poured off, a new supply put in and boiled again. This is done several times, till the acid has extracted all the silver and other mineral substances leaving the sample pure gold. The sample is then weighed, and by the difference between the weight before assaying and after, the true value is found. All the silver over and above five pennyweights for each lot, is paid for by the mint as its true value. The gold, after it has been assayed, is melted, refined, and being mixed with its due proportion of alloy, is drawn into long strips (not unlike an iron hoop for a cask) the round pieces cut out with a sort of punch, each piece weighed and brought to right size and put into a stamping press, whence it comes forth a perfect coin.

Although gold will not dissolve in nitric acid, yet it soon dissolves in *aqua regia*, a mixture of nitric and muriatic acids. In this case gold becomes a transparent liquid.

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NEW YORK, JULY 14, 1849.

Machinery and its Economy.

There are some very honest and sincere men who believe that machinery has been injurious to the working classes, and that restraints should be put upon its use, giving as a reason that "it tends to destroy many occupations." Those men have never examined deeply into the principles involved in such a question—the advantages derived from machinery, and the benefit it has conferred upon all classes. There is no middle position between the advocate of machinery and him who opposes it. The latter must stand upon the ground that man is more benefitted without, than with machinery, and he must fall back upon the resources which nature has provided for him, viz. his hands, his feet and his teeth, to supply his daily wants. In infancy, man is perhaps the most helpless of all God's creatures, but in manhood his seat of intellect rising like a lofty dome which tops a graceful building, crowns him "Lord of Creation."—It is the glorious prerogative of man above all God's earthly creatures, to possess a progressive soul. Created in the image of his Maker, it is an evidence of his divine descent that there are no limits to the expansive grasp of his gigantic intellect. This may not be noticed in individuals, but it is apparent in our race. Compare the progressive grandeur of mind displayed in the rude sled of our Anglo Saxon forefathers with the wonderful locomotive of the nineteenth century, and we will be able to form some idea of developement of mind, as displayed in the invention of machinery. Or if we take the rude canoe of our forefathers that is sometimes dug up from the sands of the Thames and the Clyde, and compare it with the steamship of the nineteenth century, we will be able to form some idea of the blessings conferred upon all mankind by improvements in machinery .Gilbert Burns, the brother of the poet, declared that "the man who invented the threshing machine was a public benefactor," as it relieved one class of men from an occupation of the deepest drudgery; and we have often wished to see some machine invented, that would at once destroy the slavish occupation of brick making. Our wishes are realized, and although the slaves of brick making have seen their "occupation gone," we have not heard of one suffering for lack of bread, and they never will on that account. A knife, an axe, a spade, a hook, a spear, are all machines. The very savage cannot do without them. Wherever the mechanic arts are found in their rudest state, there man is found as rude. Mehemet Ali of Egypt, once tried what he could accomplish without machinery, by driving 30,000 Arabs to open up one of the old aqueducts of the Nile. No spade, no hoe, no scoop was provided for them. They had to scoop up the mud with their hands, and the result was, that more than ten thousand fell victims to this barbarous spirit of oriental enterprise, and all for the want of machinery.

It is very easy to discomfit any person in argument who takes the opposition ground against machinery, but then there is another class who would use some machinery (they must do it) while they would proscribe other kinds. But what machine shall we proscribe? Will it be a sewing machine, or some new washing machine? We might as well proscribe an organ, or a piano, for they are machines, and although they may be old, it makes no matter for that, if they take away the occupation of some vocalists. An old evil should be dispatched with as little mercy as a new one. But the truth is, every improvement in machinery, is a general benefit.—Some individuals may suffer from the introduction of a new machine, but the greater number are benefitted, and we go for "the greatest good to the greatest number."

The strongest argument against the introduction of new machines and improved machinery, is the impoverished condition of operatives in the British manufacturing districts. The decline of manufactures in Ireland is her inability to cope with the coal manufacturing districts of England,—the want of the main manufacturing stimulant. In England her manufacturing machinery may be said to have passed the limits of supply. This is the cause of her evils, for it is well known that for 30 years, her manufacturing population increased at the rate of 30 per cent, while her agricultural population increased at the rate of only 1 per cent. This was an unnatural drain and she now suffers the consequences. The wars on the Continent of Europe, made her a hotbed of manufactures, and when they ceased to stimulate, it is no wonder that the forced plants suffered. No such evils need be feared on our wide continent. The land is not here absorbed exclusively by beef-eating barons, to the exclusion of oatmeal-eating peasants. No, no, every improvement in American machinery, confers a benefit upon all, whether that improvement be made upon a steam engine, a spinning jenny, or a spinning wheel. It is in view of these considerations, that we look upon America in the future, as the grand centre of civilization, because here we have room for man's developement in mechanical invention. There is one thing however to be observed in connexion with this, viz. the moral, as well as the mental developement. The two must go hand in hand. Unless they do so, we have no hope. But with a moral and mental developement which looks to the general good, every improvement in machinery can, as it should, be made a blessing to the high and low—the dweller in the lordly mansion and the dweller in the humble cottage.

Filtering Water.

As this is the season of the year when many impurities are mingled with the water with which we are supplied for domestic use, it is prudent and wise, so far as we are able, to remove those impurities. There are two kinds of impurities in water. First, those which are combined with water chemically. Second, those which combine with water mechanically.

The first cannot be removed by filtering, the second can. In no case, are we supplied from natural resources with pure water.—Pure water, that is water composed of its simple elements, oxygen and hydrogen, is not a palatable or healthy beverage. We are therefore wisely provided by providence, with water after it has chemically combined with several substances which are beneficial to the system, such as carbonic acid, and some of the salts of lime. These cannot and they should not be seperated by the common filter. But the mechanical impurities may and should be seperated.

To do this for the most common purposes, the filters that are sold in our Plumbing Establishments are excellent. But any person whatever can filter water, by pouring it into a sheet of flannel through some powdered charcoal. The water can be filtered without the charcoal by passing it through several thicknesses of flannel, or felt, but we like the charcoal, and if it was mixed with burned bone dust, it would be all the better. No person would believe, how pure the water comes trickling through the charcoal, but charcoal is one of the best filtering substances known. Any person with common ingenuity can construct a vessel to filter upon this principle.—For certain reasons we would use two ply of flannel with a wad of cotton wool between. It would be well to let the water fall through a space open to the air, before it is received into the receiving vessel. The reason for this is, that in passing through the charcoal and cloth, the water is deprived of some of its atmospheric air and it should be allowed to absorb some air afterwards before it is used.—No person should use pails that are painted with white lead. We are glad to see unpainted water pails coming into more general use.

The man who first discovered the Gold in California, was J. W. Marshall, of New Jersey, who built Captain Suter's saw mill.

Adirondac American Cast Steel.

The high character this important article of home manufacture is obtaining, induces us to refer to it again; and we trust as it is so excellent in quality, that all who feel an interest in home products will give this steel its merited support. The quality we are informed is warranted good, and is adapted to all purposes of the best Cast Steel of any other make, whilst the price is as low as the imported. The following amongst many recommendations have been handed us.

EXTRACTS.

NOVELTY WORKS, May 2, 1849.

"A cutter made of it was used in one of our largest Lathes in very heavy wrought iron turning and was found to be, to use the phrase of the very competent and experienced Lathe man, "prime tip top." We shall feel a strong preference for the American manufacture.

STILLMAN, ALLEN & Co."

UNITED STATES NAVY YARD,
BROOKLYN, June 13, 1849.

"This is to certify that I have tested the Adirondac Cast Steel, and found it to be of very superior quality, and prefer it to any I have used heretofore.

DANIEL LADD, Master Smith."

ALLAIRE WORKS, N. Y. June 13, 1849.

"Having used the Adirondac American Cast Steel in our Works we find it a very superior article. Our foreman reports that in his trials of this steel 'it stands severe work, and that he prefers it to the best imported."

R. R. McILVAINE, Manager of the Allaire Works, 466 Cherry st. New York."

BEALS & FRASER'S GRANITE YARD, N. Y.

"The Adirondac American Steel is being used in our Yard on the hardest Granites, and stands fully equal if not superior to any cast steel we have used. It has been tried in Drills, Points, Hand and Stone Hammers, and we prefer it to the best imported Steel. Our work requires the best steel that can be obtained.

BEALS & FRASER.
SAM'L. M. JONES, Foreman.
SAM'L. YATES, Blacksmith.

Our space will not admit of selecting further from the recommendations.

By a Card accompanying the above, we see that the American Steel Co.'s Warehouse is with QUINCY & DELAPIERE, 81 John st. N. Y., where orders may be addressed.

Reception of Father Mathew.

The welcome extended to this noble man and reformer on the 2d inst., was a tribute to moral worth, and shows that the sentiments of philanthropy and benevolence are warmly cherished by our people. We trust that his mission to this country may prove eminently successful in elevating down trodden and degraded man to the position assigned him by nature to occupy. His labors in Ireland, exhibit in a striking degree the power of kindness and sympathy over the unfortunate, and we hope that wherever he may go, the same generous feeling will be manifested, which will encourage him to enter the great field of reform with zeal and efficiency.

American Queensware.

The Pittsburg Gazette notices the extensive manufactories of Queensware which are carried on at East Liverpool, about fifty miles below that city. Eight potteries are employed in making ware from the clay which is obtained in the vicinity. The Gazette says the ware from these potteries is equally as good, besides being a great deal cheaper, than the English article manufactured from the same kind of clay.

This branch of our manufactures has sprung up within the past few years, and has already driven the English yellow ware from our market. It is sold in vast quantities in New York, Philadelphia and the other Eastern cities, as well as in Pittsburg, Cincinnati, Louisville, St. Louis, New Orleans, and the rest of the Western towns. The beds of coal and clay found in the vicinity of East Liverpool are inexhaustible, and we learn that several manufacturers, in addition to the yellow ware, design importing clay from Missouri, for the purpose of making white queensware.

Interesting to Navigators.

An official report from Mr. Bache, the superintendent of the U. S. Coast Survey, gives the information that Lieut. Commanding Chas. H. Davis has determined the position of Cashe's ledge off the Coast of New England. This ledge, termed "dangerous" in the "American Coast Pilot," was sought for last season by Passed Midshipmen Ammen, under the immediate direction of Lieutenant Commanding Davis, but efforts were not crowned with success. The determination by Lieut. Com. Davis places Ammen's rock of Cashe's ledge in latitude 42 56 N., longitude 68 51½ W.—This differs nearly 12 minutes in latitude, and 12 in longitude, from the last previous determination. Lieut. Davis says—

The latitude of the rock, by the meridian observation of the sun is - 42° 56' N.
The longitude, the mean of both days, is - - - - - 68 51½ W.

The least water on this rock is twenty-six (26) feet; a less depth has been reported by fisherman, but they sound with their fishing lines, not accurately marked, and having on them a lead of three and a half pounds only; not heavy enough to press down, or pass through the thick kelp that covers the rock. The extent of rock having ten or less fathoms on it, is about half a mile in a N. W. by W. and a S. E. by E. direction, and very narrow. It is surrounded by a deep water at a short distance, particularly on the south and east side, where the depth increases suddenly to sixty fathoms.

Food in Cholera Times.

Dr. Mitchell, professor of Theory and Practice in the Medical College of Philadelphia, in a late lecture on the subject gives the following as the Safe and Unsafe food during the prevalence of this disease:

SAFE—Beef steak, beef tongue, dried beef, mutton, chickens, ham, mackerel, smoked herrings, rice, roasted good potatoes, toasted bread, crackers, mustard, horse radish, salt, pepper, vinegar, black tea, Java coffee, iced water, iced lemonade, iced claret, soda water, ice cream.

UNSAFE—Fresh pork, veal, fresh fish, oysters, greens generally, unripe fruits, fresh warm bread, sour bread, molasses and water, common alcoholic drinks

[The Doctor recommendations are strictly correct and are just as applicable to every day life—healthy and unhealthy seasons.

Newspapers in Europe.

The London Times, a daily paper, costs $45 per year. The same rate is charged for the Morning Chronicle, Daily News, Globe, Herald and Post. The London Evening Mail is published three times a week at $25 a year. The London semi-weeklies, $16,50 per annum, and weeklies, $12, and $9. The French daily papers, the large ones, are about the same as the London prints; those about the size of our penny papers cost $20 and $25 per annum. The German dailies cost $22 to $36 per annum.

[The above we copy from an exchange, in connexion with it we must say that there are some weekly publications in London, which are far cheaper than we can put them up here, such as the London Journal, and the "Family Herald;" they only cost one halfpenny per number and there is a great amount of illustrated reading in them.

Model Making.

This peculiar branch of business in which little has been heretofore done has latterly assumed a stand with other kinds of business and is quite extensively carried on in this City. Among the many establishments which attend to this branch of business we know of none of them that can get up a neater model for a small price than Mr. Peckover, whose advertisement appears in another column.

Courts of Conciliation are much needed among us. There are evils and abuses in our present system of courts that need remedying. People bow to them at present submissively, because they are the fruits of long custom; but they are not the less bitter fruits for that.

Flour in Bags.

Tne Albany Argus states that the sale of flour in bags is becoming quite a trade between the New York Millers and the East. **The bags are of sufficient size to hold a barrel.**

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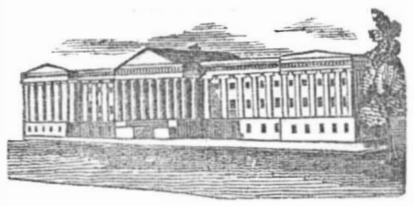

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending July 3, 1849.

To J. E. Serrel and David Smith, for Centripetal Press. Patented July 3, 1849.

To W. E. Bleecker, H. Bleecker, and S. D. Vose, of Albany, N. Y., for improvement in Cooking Stoves. Patented July 3, 1849.

To J. Alley and H. W. Poole, of Worcester, Mass. for improvement in Keyed Musical Instruments. Patented July 3, 1849.

To W. B. Carlock, of New York City, for improved manufacture of Bags and Sacks.—Patented July 3, 1849.

To B. L. Stedman, of Warren, Mass., for improvement in machines for cutting Veneers in cylindrical blocks. Patented July 3, 1849.

To L. S. Chichester, of Troy, N. Y. for improvement in machinery for the Jointing of Staves. Patented July 3, 1849.

To J. W. Fisk, of Rileytown, Ohio, for improvement in Winnowing Machines. Patented July 3, 1849.

To E. C. Langer, of Salem, Mass., for improvement in Regulators for self-acting Mules. Patented July 3, 1849.

To E. & E. Gore, of Charlestown, Iowa, for improvement in Windmills. Patented July 3, 1849.

To William MacLardy and J. Lewis, of Manchester, England, for improvement in Live Spindles and Fliers. Patented in the United States July 3, 1849—In England May 9, 1848.

To William Massey, of Greene Co. Ill., for machine for contracting the circumference of wrought iron bands. Patented July 3, 1849.

To Thomas King, of Westchester Co. N. Y. for improvement in Washing Machines. Patented July 3, 1849.

To John Abernethy, of Woodbury, Conn., for improvement in attaching Buckles to Suspenders, &c. Patented July 3, 1849.

To George Wheeler, of Little Valley, N. Y. for improvement in Bee Hives. Patented July 3, 1849.

To L. W. Colver, of St. Louis, Mo., for improvement in Washing Machines. Patented July 3, 1849.

To J. L. Kingsly, assignee of J. G. Day, of Brooklyn, N. Y., for Rotating Disk, Bolt and Rivet Machine. Patented July 3, 1849.

To Joshua Bailey, of Cohoes, N. Y. for improvement in Machinery for Picking Waste.—Patented July 3, 1849.

To David Philips, of Pittsburg, Pa. for improvement in Circular Saw Mills. Patented July 3, 1849.

Cures for Rheumatism.

The following are said to be good lotions for the evils of rheumatism. As they are simple they can at very little expense be fairly tried by those inflicted with those evils.

INFLAMATORY.

Half an ounce of alum, half an ounce of pulverized saltpetre, put in half a pint of sweet oil. Bathe the parts affected.

COMMON RHEUMATISM.

Take a pint of the spirits of turpentine, to which add half an ounce of camphor. When dissolved, rub it on the part affected, and it will never fail of removing the complaint.—Flannel should be applied after the part is well fomented with turpentine. Repeat the application morning and evening.

Making a Mark.

A captain of a sloop at one of our wharves hired a Yankee, " a green hand," to assist in loading his sloop with corn. Just as the vessel was about to set sail, the Yankee, who was jingling the price of his day's work in his pantaloons, cried out from the wharf,—" Say, yeou capting ! I lost yeour shovel overboard, but I cut a big notch on the rail fence around the starn, right over the spot where it whent down, so't you'll find yeour shovel when yeou come back."

For the Scientific American.

The History of Steam Navigation.

OLIVER EVANS, WILLIAM STEVENS AND ROBERT FULTON.

About the year 1789 Oliver Evans, who was undoubtedly the most original steam engine inventor in the United States, the contemporary and equal inventor with Vivian and Trevithick of the high pressure locomotive, also made drawings of the application of his engine to propel steamboats. We may well give him more credit than any other of our steamboat inventors, for inventing a good steam engine and adapting it to all kinds of machinery a steamboat among the rest. To William Stevens of Hoboken, also belongs great credit for his early attempts at steam navigation.—He first tried a rotary engine but it was a failure, yet the first steamboat boiler which Mr. Stevens made to generate steam for his rotary engine steamboat, was a capital invention. It was made of small copper tubes each about 1 inch in diameter and two feet long inserted at each end into a brass plate and the plates were closed at the ends of the pipes by a strong cap of cast iron or brass with the space of an inch or two between the plates. The water was supplied by a forcing pump. Col. Stevens was the first inventor of the all important tubular boiler which he secured by letters patent in England in 1805. In 1804 Mr. Stevens with one of Watts' engines, having a cylinder of 6½ inches diameter and 9 inch stroke propelled a boat on the Hudson at the rate of 8 miles per hour. This steamboat was run for a few weeks and laid aside, after Col. Stevens had spent as he said 20 years of his life and $20,000 without deriving a shillings' worth of benefit. There must however, have been either something faulty about the engine, the build of the vessel or that our country was not ripe to be convinced of its utility at that time, for the steamboat slumbered with us until Robert Fulton took it up in 1806. Before that period however, Fulton had been a sojourner in foreign lands and it has been charged upon him that he derived all his knowledge and ideas of the steamboat from others.

In 1788 Mr. Miller a Scottish gentleman propelled a small steamboat on Dalswinton Lake and the engine that propelled that boat is still in existence. Mr. Miller's invention was certainly very successful, but it cost him £30,000 and he never realized a penny for it. It has been asserted by some that Fulton was a witness to Miller's experiments and from them derived his knowledge of the steamboat, but this we believe to be without foundation, for although Stewart says that " he visited Scotland and examined Mr. Miller's boat," yet it is well known that Fulton only arrived in London in 1786 and it is not likely that a stranger like him and an artist could have heard of Miller's invention which had not become much known. In 1793 Fulton made known to the Earl Stanhope his plan for propelling boats by steam and in 1796, he published a book in England on the subject, which was illustrated with some very good engravings. In 1796 he went to France and tried to get that government to adopt and provide means for the construction of his boat, but he was refused by the Minister of Marine. After this he went to Holland and made several trials with a boat, the means for which were paid by a Mr. Vanstaphet but they all proved failures. In 1801 Fulton invented his nautilus, to sail under water and to sink and float at pleasure, Napoleon gave him some money to try an experiment on a large scale at Havre. Fulton came near destroying an English Man of War in Brest Harbor, but it escaped, and after that Napoleon would advance no more money. Many have endeavored to rob Fulton of an original and inventive mechanical mind, but his nautilus condemns all detractors.—There can be no doubt but Fulton was a keen observer and wherever he saw a good thing, he was not the man to forget it, this itself, is the sign of a great mind. When Fulton was in Paris he communicated to Mr. Robert Livingston his plan for propelling vessels by steam, and Livingston being a man of a comprehensive mind saw the utility of such a mode of navigation. An agreement was made between them to embark in the enterprise, and to Fulton was left the direction of the experiments. Among the schemes which Fulton thought of for propulsion and discarded, says his biographer, was that of Fitch and Rumsey, but Fitch by the testimony of Nathaniel Boileau who made his paddles, and who was Secretary of State in Pa., after the Revolution, used two paddle wheels on his first model. Fulton however, did not know this. Fulton at one time thought of employing duck foot paddles, and at another time he thought of using paddles on an endless chain, but as Monsier Der Blancs had a patent for paddles on an endless chain and a horizontal cylinder, he warned Fulton not to infringe on the same. Fulton then replied that his boat was to be propelled by paddle wheels, which by experiment he found to be the best system. In August 1803 he tried an experiment on a boat 66 feet long and 8 feet wide, on the Seine. It was very successful considering all things and gave him perfect confidence in its power and so it did to Livingston. Instructions were then given to Watt and Bolton to prepare a steam engine which was to be sent to New York, in order to introduce his invention into his native country, and Livingston and Fulton got a grant by this State, New York, for the exclusive navigation of her waters for 20 years.—Fulton then went to England and remained there till 1806 when he left for New York and arrived here in December. In the Spring of 1807, after much perseverance and difficulty, he had completed his vessel and had it launched on the East River. At this time the engine from James Watt had arrived with engineers to put it up in his boat, and in August 1807 he had the satisfaction of seeing his far famed vessel named the Clermont walk the water to the Jersey shore. There were very many sceptics converted from doubt to admiration before she moved 100 yards, and while the shores were lined with multitudes, one loud shout of triumph from the incredulous multitude, shook the welkin.

To be continued.

Chlorine Gas.—Muriatic Acid.

Chlorine is a gas of a greenish colour, and derives its name from *Chloros* a Greek word signifying " greenish." This gas is very dangerous to the lungs if inhaled, hence its employment in every case should be a work of caution and prudence. Many people have lost their lives while engaged at the occupation of discharging Adrianople red handkerchiefs, a style of work associated with the name of Sir Henry Monteith who carried it to the highest style of perfection. Chlorine may be obtained by mixing one part by weight of the black oxide of manganese in powder with two parts of common muriatic acid in a flask, and then applying the spirit lamp, when the gas is immediately evolved, and it may be collected over water. Chlorine acts with great energy on all metals, even platinum. Chlorine is a great bleaching agent. It acts directly upon colored vegetable fibres, and is therefor now exclusively used for making green linen and cotton goods white. It must be carefully managed however, or it will act upon and destroy the vegetable fibres as well as the colored fibres. Many pieces of calico are rendered quite rotten through the ignorance of the bleacher. In bleaching linen or cotton sheeting white, there is generally a Turkey red, or a blue thread woven in with the cloth, at the end of each piece, as a guide for the bleacher. Whenever this thread loses much of its color, it is a sign that too much chlorine has been used. Sometimes chlorine is required to bleach the whole surface of goods and sometimes only to a portion of the surface. We will describe the former process at some other time; Chlorine unites with Hydrogen, and forms an acid compound, known by several different names, as Muriatic Acid, Spirits of Salts, and Hydrochloric Acid. The first of these names is perhaps the most common even among chemists, but hydrochloric acid is the most appropriate as it expresses the composition of the acid. When equal volumes of these two gases are mixed together, and exposed to the diffused light of day, they slowly combine, but if exposed to the direct solar rays, an explosion takes place, and the acid compound is instantaneously formed. The acid thus formed is a gas, but water absorbs 480 times its volume of this gas, and, as the liquid form is more convenient, this solution of the acid gas in water is generally employed, instead of making use of the acid in the dry or gaseous state. As the liquid hydrochloric acid is merely a solution of the acid gas in water.

Hydrochloric acid gas is perfectly unrespirable; it extinguishes the flame of a taper, and is itself inflammable; it acts violently on the skin; it possesses a strong attraction for water. Hydrochloric acid is always procured (except for purposes of experiment) from common salt, in the manufacture of soda ash, by the action of sulphuric acid. It is not generally manufactured for itself, but is a waste product; and large quantities of it were formerly suffered to escape into the atmosphere, where it acted so injuriously on vegetation, that nearly every soda ash manufacturer has, in his turn, been prosecuted by the neighbouring farmers. Such are its injurious effects on vegetables, that even when mixed with 20,000 times its volume of atmospheric air, it shrivels and kills all the leaves in twenty-four hours. Many different processes have been adopted for preventing the escape of this acid gas into the atmosphere in the manufacture of soda ash; all of them, however, are based on the fact of the great attraction of this gas for water. This acid is very impure, but, if distilled into a receiver containing water, the impurities are nearly all separated. The impure acid is of a yellow colour, the pure acid is colourless.

England as it will Be.

It is now the fashion says Macauley, to place the golden age of England in times when noblemen were destitute of comforts, the want of which would be intolerable to a modern footman; when farmers and shopkeepers breakfasted on loaves the very sight of which would raise a riot in a modern workhouse; and when men died faster in the purest country air than they now die in the most pestilential lanes of our towns or than they now die on the coast of Guinea. We too, in our turn will be envied. It may be in the twentieth century, that the peasant of Dorsetshire may think himself miserably paid with 15s. a week; that the carpenter of Greenwich may receive 10s. a day; the laboring men may be as little used to dine without meat as they now are to eat rye bread; that sanitory police and medical discoveries may have added several more years to the average length of human life; that numerous comforts and luxuries which are now unknown, or confined to a few, may be within the reach of every diligent and thrifty-working man.

"British National" Debt.

The London Standard of Freedom says that the constant course of the government to style the public debt " National" is an exception to their mode of nomenclature for everything else of a public nature. The Army and Navy are the Queen's. The Church is a State Church. The Courts of Justice are all Regal. Down to the very constable, every officer is the Queen's officer; nay, the peace of the nation is the Queen's peace. The Debt alone has, ever since its commencement, in the year 1694, been deemed solely the People's concern. The part of the government was to borrow and spend it. It was the People's part to pay it.

Superlative Unconcern.

The tranquility and phlegm of the Scotch in most extraordinary circumstances, " brings to mind," says Colman, in his " Random Records," the incredible tale of the Scotchman tumbling from one of the loftiest houses in the old town of Edinburgh. He slipped, says the legend, off the roof of a habitation sixteen stories high; and when midway in his descent through the air, he arrived at a lodger looking out a window of the eighth floor, to whom (as he was an acquaintance) he observed, en passant, " Eh, Saundy, man, sic a fa' as I shall hae !"

Blowing Furnaces on Sunday.

The Pittsburg American says that the yield of metal from the Pine Grove Furnace of Messrs. Hamilton & Co., which is stopped on Sundays, is on an average of 10 tons per day, *producing as much* as those of equal size that work the seven days. When the furnace is not blowing, it is stopped tight below and above, hermetically, and thus but little heat is lost.

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TO CORRESPONDENTS.

"J. A. H. E. of N. Y."—We venture to say that if you construct an electric apparatus attached to the steam boiler, that you will not be able to decompose a single drop of water to burn the gas for heating the boiler.

"LeR. M. L. of Ill."—The principles of your Water Wheel, are very old, and have been in use for several years. The same plan has been shown us several times within the past year, and we think as a general thing they are not so good as overshot wheels, being more liable to injury. No patent could be obtained for it.

"C. H. B. of Mass."—We do not think your plan could come into competition with the machines now in use for the purpose.—We should not be satisfied of its value until an experiment had been made to test it. The simple lever power is always most effectual Experience proves this.

"F. N. of Warsaw."—Is informed that his plan for locking up forms is not new. The same principle is now used in this city.

"I. S. of Mich."—You had better associate some one with you, and make him acquainted with the value of your invention. We could not dispose of it for you, and if as you say it is extensively used throughout the States no patent could be obtained for it.

"E. S. P. of Glade Spring, Va."—If you are not satisfied with the reply we made you concerning Johnson's Shingle Machine and Barber's Grist Mill, you must address the inventors. Your threatening to stop the paper because we did not write to the parties and find out more particulars for you does not affect our nervous system in the least. Keep cool and thereby prolong your life. "Consistency is a jewel."

"S. L W. B. of N. Y."—We hope that you have made the grand discovery, but there is no man acquainted with the rotary engine, who knows something of sanguine expectations never realized, but will say, as we must, *respice finem.* The engines you referred to, not having proved so successful as was expected, were not desired to be published, although if we had been furnished with drawings they would have been. The General's is where it always will be.

"N. M. S. of Mo."—We have no great confidence in your plan for preventing explosions in steam boilers. It is not so reliable in our opinion as Lyman's Steam and Water Guage. At any rate we should not wish to encourage you to spend money upon it, and had we time, we could point out many serious objections to it.

"J. D. of Va."—Two numbers of Ranlett's Architecture were forwarded to you on the 6th inst.

"A. P. C. of Mass."—It is contrary to our rule to publish an engraving twice in the Sci. Am., consequently you must rest satisfied with the matter, as it now stands.

"I. N. H. of Pa."—Model forwarded as per your instructions of the 30th ult. Don't forget to inform us of the result of your experiments.

"P. H. G. of Geo."—In the present age of wonderful inventions there seems to be no limits to the genius of man, yet we are inclined to the opinion that many years will roll away before balloons will succeed to the satisfaction of the public, or a telegraph constructed to span the ocean. Your ideas appear well upon paper, much better than they would upon the bosom of the sea. We do not say this to discourage you, but you may depend that the plan will not do.

"J. M. Mc W. of S. C."—We have shown your letter to Messrs. B. & B. and they have rectified the mistake, but we have no knowledge of Dr. Weipleholm, never heard of the man before. If we should, he will hear from us.

"T. W. G. of Pa."—Accept our thanks for your encourging letter, coming from a brother editor, we prize it very highly. The $2 enclosed has been placed to the credit of Capt. Patterson and the last paper forwarded.

"D. & Bros. of Tenn."—We are corresponding with parties in regard to your business. The only objection to complete success arises from the uncertainty of a permanent arrangement.

"C. R. of Mass."—We are glad that you have found a way to get the desired information. It will assist you greatly in the business.

"E. B. W. of N. H."—The model of your machine for cutting and heading Ship Spikes has not come to hand yet. Will you please forward it.

"D. V. of N. Y." "L. S. E. of Pa."—The specifications of your inventions were sent to your address for signing last Monday. Please return them as soon as executed.

"J & M. and S. G. of N. Y." "W. H. C. of Ala." "B H. and H. N. F. of N. H." and "J. E. A. of Mass."—The drawings of your several machines are executed and the specifications will be completed in a few days and forwarded for signatures.

Money received on account of Patent Office business since July 5 :—

W. B. G. of Mass $25. B. H. of N. H. $30. J. E. A. of Mass. $60 H. N. F. of N. H. $50. and S. G. of N. Y. $6. G. W. P. of Mass. $20

Advertisements.

NOTICE.

☞We have constantly on hand and for sale :

Minifie's Mechanical Drawing Book, bound in calf,	$3,00
Cook's Condensing Engine, Plate and Book,	$3,00
Leonard's Mechanical Principia,	$1,50
Scribner's Mechanics,	$1,50
Ewbank,s Hydraulics and Mechanics	$2,50
Morfitt's Chemical Manipulations,	$2,50
Ranlett's Architecture in numbers, each	50
Arnott's Gothic Architecture " "	25
Camera Lucidas,	$6,00

j14 MUNN & CO.

STEAM BOILER EXPLOSIONS.

THE subscriber having been appointed sole agent for Faber's Magnetic Water Guage, is now ready to supply the trade and individuals with this celebrated instrument. Besides the great safety from explosions, resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow-off." Pamphlets containing full information can be had free on application to the Agent, JOSEPH P. PIRSSON,
j14 tf Civil Engineer, 5 Wall st. New York.

FOREIGN PATENTS.

PATENTS procured in GREAT BRITAIN and her colonies, also France, Belgium, Holland, &c. &c., with certainty and dispatch through special and responsible agents established, by, and connected only with this establishment. Patents containing a synopsis of Foreign Patent Laws, and information can be had gratis on application.

JOSEPH P. PIRSSON, Civil Engineer,
j14 tf Offices 5 Wall st. New York.

MORSE'S PATENT AIR DISTRIBUTOR.

THIS improvement is a substitute for the common Grate. by which Tan, Sawdust or a like material will burn as freely as dry wood. It has been introduced in most of the Northern States into Steam Saw Mills and Tanneries with the most gratifying results. We are now prepared to furnish castings at reasonable prices at New York or Philadelphia. A model may be seen at the office of J, P. Morris & Co. Steam Engine Builders, Philadelphia, who are prepared to furnish castings at short notice.

Persons wishing to purchase territorial rights will address L. MORSE & BROTHERS. Patentees,
j14 2t* Athol, Mass.

Agents will take notice that the right for the states of New York, Pennsylvania, Maryland & Delware have been sold L. M. & BROS.
Athol, July 3, 1849.

A DYER

WANTS a situation. He is well acquainted with the dyeing of all fast and fancy colors on cotton yarn. He is also somewhat acquainted with woolen dyeing. He can produce the best of references in respect to character and qualifications to conduct the business.

Address J. MACFARLANE, care of Editor Scientific American. j14 2t*

A CHANCE FOR SPECULATION.

THE undersigned wishes to find some person who will furnish means to introduce and apply for a patent for two new inventions. One of them is a Balance Rotary Slide for steam engines, noticed in No 39 this vol. Scientific American, and the other is a Steam Governor, both valuable inventions. They can be made and sent to any part of the world at a trifling cost. Address immediately. post paid, JAMES W. CHAPMAN,
j14 2t* Washington. Davis Co. Ind.

To Manufacturers or Capitalists about to commence the Manufacture of Cottons.

THE subscriber, brought up with Messrs, Samuel & Jno. Slater, at operating and building cotton machinery, and for the last 20 years has travelled through several of these United States, setting up and building, on the most approved plans of modern invention, now offers his services as Superintendent and is ready to introduce a new system, greatly reducing the cost of manufacture, and at the same time making better goods than ever was in the market. Please direct (post paid) to

G. W. HOWARD, 228 Eddy st.
j14 2t* Providence. R. I.

WANTED.

TWO or three first rate Millwrights, of capacity and experience, to go South ; a healthy location Apply to J. G. WINTER, SON & CO.
j7 3t* 54 Wall st, New York.

TO IRON FOUNDERS.

FINE ground Sea Coal, an approved article to make the sand come off the Castings easily ; fine bolted Charcoal Blaacking ; Lehigh fine Dust, and Soapstone Dust for facing Stove Plates, &c. &c. ; also, Black Lead Dust, for sale in Barrels, by

GEORGE O. ROBERTSON.
m24 4meow* 303 West 17th st. New York.

TO INVENTORS.

THE SUBSCRIBERS offer their services to persons wishing to obtain patents in the United States or in foreign countries, and will prepare specifications and drawings and take all necessary steps to secure a patent.

From their long experience as practical mechanics, added to a thorough knowledge of the Patent Laws and acquaintance with the details connected with the business of the Patent Office, they trust they will be able to give satisfaction to their employers, both in the clearness and precision of their specifications, and in the promptness and ability with which they transact all business entrusted to them,

Persons residing at a distance may procure all necessary information, have their business transacted and obtain a patent by writing to the subscribers, without incurring the expense of a personal attendance at Washington

Models can be sent with perfect safety by the expresses.

Rough sketches and descriptions can be sent by mail.

For evidence of their competence and integrity they would respectfully refer to all those for whom they have transacted business.

Letters must be postpaid. Office on F st. opposite the Patent Office. P. H. WATSON.
j30 4t* E. S. RENWICK.

The attention of Railroad, Steamboat and Manufacturing Cos. is invited to J. Cumberland & Brother's

PATENT WHITE METALLIC OIL,

FOR steam engines and heavy machinery of all kinds. For its durability, purity from gum, and superior anti-friction properties, as well as its great economy, it has received the approval of the following gentlemen :—

Messrs. John Corell, Congress Steam Mills, 172 Forsyth st. ; J. P. & Thos. Cummings, Chelsea Mills, 25th st. ; Hecker & Brother, Cherry st ; John Jewett & Sons, 182 Front st. ; R. Hoe & Co. Sheriff st. ; James Payne, Brooklyn City Mills ; James E. Fairbanks & Co, and many others who have been using it a long time with entire satisfaction.

Manufactured by J. Cumberland & Brother, Patentees, Elizabethport, N. J., to whom orders from a distance should be addressed.

ANDREWS & JESSUP, No. 70 Pine st. New York, Agents, have constantly on hand both the Fluid and Hard Metallic Oil, put up in one to five gallon cans and barrels, at the Manufacturers' Prices. j23 4t*

SOUTH WESTERN PATENT AGENCY

THE Subscriber has opened an Agency for the sale of patent rights, machinery, &c. of every description. My object is to enable inventors and manufacturers to realize the fullest advantage from their rights by introducing them into the vast West. All kinds of really good machinery and inventions are wanted, such as stave dressing, barrel making, morticing, sash, iron and wood turning, drilling, pressing and railroad machinery, as well as water wheels, windlasses, steam engines, cotton and woolen mechinery, &c. To sell machines, &c. a model or machine will be needed ; for patent rights a power of attorney would be requisite. My charges will be moderate, and energy used to forward sales. No charge will be made until some benefit is realized. Letters (Post Paid) will receive immediate attention.

References :—Geo. Higgins and Geo J. Mankin, New York ; S. Laflin, St. Louis ; Hon. James H, Woodworth, Mayor of Chicago.

JOSEPH E. WARE,
j30 tf 65 Second st, St. Louis, Mo.

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☞The Second EXHIBITION of the MARYLAND INSTITUTE for the Mechanic Arts, will be held at Washington Hall, in the City of Baltimore, from Thursday, 27th of September. to 13th October, inclusive. Machines, models, or goods sent to the address of H. Hazelhurst, Corresponding Secretary of the Institute, (expense paid) will be met with immediate attention, and every facility used to exhibit the same to the best advantage. j16 4m

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Z. C. Robbins,

Consulting Engineer and Counsellor for Patentees.

Office on F street, opposite Patent Office, Washington, D.C. j20 tf

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THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use. Manufactured at Augusta, Me. and Albany, N. Y. J. G. JOHNSON.
Augusta, Maine, Oct. 28, 1848. o28 1y

☞Messrs. Norcross & Co. No. 60 Nassau st. New York, are Agents for the sale of my Shingle Machines.

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THE undersigned have made such arrangements with Foundries, Machinists and Patentees, that they are prepared to furnish all kinds of machinery or mechanical tools at manufacturers prices. Steam Engines of any power, Horse power. Lathes, Mills of all kinds, Presses, Planing & Shingle machines, Mill and circular Saws, and every kind of machine or Tool, used by a mechanic or manufacturer. Also a lot of second hand machinery for sale low.

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Patent Laws and Business.

After what we have said in previous articles respecting the action of the Patent Office, we would now state one unanswerable argument as a friendly hint to the Patent Office to be liberal in decisions. An Examiner may be too apt to assume the office of a Judge, forgetting that at best, a Patent is but a mere opinion of the Patent Office, in respect to originiality and usefulness. The Patent Laws were framed by a lawyer and he took good care to engraft upon them the old English proviso of business for the trade. The 12th section of the law of 1836, says, " *Provided, however*, That no opinion or decision of any Board of Examiners, under the provisions of this act, shall preclude any person interested in favor or against the validity of any patent, which has been or may hereafter be granted, from the right to contest the same in any judicial court, in any action in which the validity may come in question." Thus the law is plain that a patent is but an opinion of the Patent Office, subject to be reversed or confirmed by action at law.

The grand point then is to have good Patent Laws—laws whereby the patentee will be fully protected in his rights until his patent is set aside for want of originality, and then it should at once be rendered void—annulled, so that there would be no more trouble on the subject, either to the patentee or the public. It would be well when a patent was to be contested, to publish the claim and state the nature of the patent, for a month or more before the trial, in two or more public periodicals, to give all due warning of the event, so that a fair trial may be had, to establish the patent upon an impregnable rock—no second trial being allowed—or to prove its want of originality, and then annul it. A defeated patent should then go back to a particular file in the Patent Office, and two thirds of the Patent fee be returned. A law of this kind would save much litigation. The only difficulty to be apprehended in settling the validity of a patent by a single trial, would be in cases of infringement—not in the originality, but we will make this the subject of a future article. We want to see a patent worth something without the expense of a continual suing, battling and fighting in every District Court in the States to establish its validity, as can now be done under the present Patent Laws.

No doubt the lawyers like the system generally, but the writer of this thinks it is a system, which although it does well in England, under the central sweep of King's Bench, and the giant influence of the scientific Brougnam to see justice done to inventors, is altogether a different affair for the United States and is not suited to our institutions, nor the nature of our country. There was certainly a great want of mental perception, in engrafting that system upon our Patent Laws.

The late Convention of Inventors which met at Baltimore on the 8th of last March appointed Judge Phillips and Judge Rand, of Boston, and Geo. Gifford, Esq. of New York, a committee to prepare a draft of a new Patent Law, to be presented before the assembling of the next Congress The appointment of that Committee, without a single inventor among the number, was an unfortunate affair—it does not promise much to the inventor. The legal gentlemen are men of uncommon ability, and they will no doubt dispose of their draft of Patent Laws, for the benefit of counsel, as Soult used to dispose of his army, by always providing a good door of retreat, before engaging his enemy. As that committee is somewhat distinguished for skill in opposing patents, many inventors will have anxious forebodings of that philanthropy which quartered their enemy in their camp. But there are disinterested friends of inventors, and lovers of science who will exert all their influence to see that justice will not administer law with her eyes bandaged.

JUNIUS REDIVIVUS.

To make Domestic Vinegar.

Many families purchase their vinegar at a very considerable annual expense : some " make do" with a very different article ; and others, for want of a little knowledge and less industry, go without. It is an easy matter however, to be at all times supplied with good vinegar, and that too without much expense. The juice of one bushel of sugar beets, worth twenty-five cents, and which any farmer can raise without cost, will make from five to six gallons of vinegar, equal to the best made of cider or wine. Grate the beets, having first washed them, and press the juice in a cheese press, or in many other ways, which a little ingenuity can suggest, and put the liquor into an empty vinegar barrel ; cover the bung with gauze, and set it in the sun, and in 12 or fifteen days it will be fit for use.

Sweet oil occasionally rubbed over bedsteads, &c. is said to be a sure preventative of bed bugs.

Manufacture of Glass.

(*Continued from page* 336.)

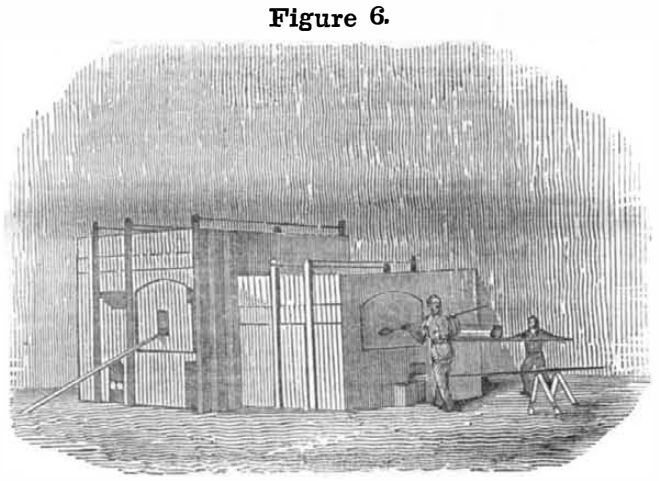
As explained in our last, the blower has now completed his portion of the work, and the cylinder is transferred to the splitter, who by holding it vertically in two V's, attached to an upright rod fast in a flat board, cuts the ends more true by means of a pair of spring pincers mounted on wheels, having a glazier's diamond fastened to one of the jaws. Fig. 5 shows more clearly how this is effected, the diamond describes a plane parallel to the board, so that the end is made perfectly square with the axis; the cylinder is laid in

FIG. 5.

a kind of cradle, and a straight rule being held inside by the workman parallel to the axis, he draws a diamond along the edge, which accordingly splits the cylinder from end to end ; as his arm is not long enough to reach through, he inserts the diamond into a cleft stick, in nearly the same manner that painters set their brushes when wishing to paint sideways at a great height.

For the purpose of being opened or spread out flat, the split cylinder is passed to the " flattener," who completes the process at a reverberatory furnace or kiln, consisting of two chambers of unequal dimensions, with floors of stone or very large bricks made quite level and flat. The smaller of the chambers or the " spreading kiln," is heated to bright redness, and is separated from the larger and cooler chamber, or " annealing kiln," by a brick partition, at the bottom of which on a level with the floor, is a long slot about an inch high, forming the only communication between the kilns. In order to heat the glass gradually, it is introduced on a carriage by degrees into the " spreading kiln" through a sort of tunnel, which terminates in one side of the kiln where the heat is less than in the centre. By putting an iron lever inside and lifting the cylinder up on the end of it, it is taken off the carriage and brought more into the heat ; the aperture in the kiln through

Figure 6.



which the lever is introduced opens directly into the hottest part, and is left open for the insertion of the necessary tools used during the process ; in a short time the cylinder is removed and placed in the hottest part of the furnace, not however resting on the bare stone floor, but on an intermediate sheet of glass called a " largre," whose office is to prevent the cylinder whilst soft from being scratched by the stone or the dust from the fires. At the red heat of the furnace the glass soon becomes flexible, and the flattener so regulates the heat that the glass may be easily bent, but is not melted nor even soft enough to stick together; the cylinder is now as it were, unrolled, and being carefully spread open, all puckers and wrinkles are rubbed down by a piece of wood the same shape and size as a common brick, with a long iron rod handle struck at right angles into one side of it.

(*To be continued.*)

White Printing Paper.

Those who are not acquainted with the manufacture of paper will scarcely believe that the paper of which most our newspapers are composed is made from the rags of old calico, but such is the case. The rags are first reduced to a coarse paste, technically termed half paste, then in a suitable vat, from four to eight pounds of chloride of lime, dissoved in sufficient water to cover the paste, is poured on the colored mass ; it is now acidified with with half a pound of sulphuric acid for every pound of the chloride of lime employed. The mixture is then agitated for a short time by machinery suited to the purpose ; when the rags appear quite white, water is made to flow through the mass, still continuing the agitation until all the lime has been washed out of the pulp A little free hydrochloric acid added to the last portions of water would tend more perfectly to remove the lime from the pulp, and thereby prevent its turning brown by age. In most of the paper manufactories in France, instead of using chloride of lime, chlorine gas is passed through the pulp ; this is a better process if carefully carried out, for as no lime is used in the proeess, none can remain on the paper.

Disinfectant Liquid.

One of the best disinfectants is the chloride of zinc. This is just pieces of common zinc dissolved in muriatic acid. Any person can make this liquid. To use it for sewers and sinks, about 1 pint of it for a common sink dilluted with a gallon of water will perform wonders. It is an excellent disinfectant for purifying the bilge water of ships, and its value cannot be too highly extolled. Along with its qualities as a disinfectant, it is an excellent wood preservative. The process of doing this is to introduce a solution of zinc into the pores of the wood by pressure, in cylinders or vessels for that purpose. It also preserves canvass for a long time, and some of our store keepers should substitute this for lime, the article now used for this purpose.—From experiments which have been made with the chloride of zinc upon pine wood it would appear that it combines chemically with the ligneous matter of the wood, and that although this salt is soluble in water to an enormous degree, the compound which it forms with the wood is insoluble.

To Make a Stove as Bright as a Coach Body by two Applications a Year.

Make a weak alum water and mix your British lustre with it, perhaps two teaspoonsful to a gill of alum water. Let the stove be cold—brush it with the mixture—then take a dry brush and lustre and rub the stove till it is perfectly dry. Should any part, before polishing, become so dry as to look gray, moisten it with a wet brush and proceed as before.

[The above can easily be tried for the purpose stated. One thing we know about it, from its nature, that it is perfectly plausible, alum being a bad conductor of heat. In that case there is an advantage and a disadvantage. In the one case you keep your polish, but lose your heat.

LITERARY NOTICES.

Linear Perspective.

Number 3 of this valuable and cheap publication, edited by Mr. E. Jones and published by C. M. Saxton, No. 121 Fulton st. this city, is a very excellent number. This is a good work for schools and is a text book to the amateur artist and mechanic.

Wilson's Business Directory for 1849 and '50. is now published and for sale. It is an invaluable work for business men generally, and more especially to strangers having business to transact here. It contains a map of New York and a complete list of the Banks, Merchants, Newspapers, Machinists, Hotels, and in fact every respectable trade done in the city. We cheerfully commend it to public attention. Price 50 cents. Published by John F. Trow, 47 Ann st.

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Grace Dudley, or Arnold at Saratoga, is the title of a very interesting historical romance from the pen of C. J. Peterson. For sale by Berford & Co. Astor House. Price 25 cents.

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This is a new work published by D. Appleton & Co., No. 200 Broadway, and edited by D. H. Arnott, architect. It is published in numbers, price 25 cents each, six of which have already been issued. The object of this work, is not to introduce a new style of architecture into the country, but it is to bring that beautiful style before the public in a prominent manner, by showing its direct and suitable applications to the scenery and character of our country. This work is the best one of the kind ever published here before. Each number contains four excellent plates and a number of small illustrative cuts. It is a work which we commend to the architects of our country. If they wish to keep up with the spirit of progress, they will not neglect our advice, which is unbiassed by any other consideration but the merits or the work.

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